

What is claimed is:

1. A method for controlling establishment of a communication channel in a distributed network environment, comprising:

5 detecting approach of network congestion in said distributed network environment;
transmitting an indicator of said approach of congestion to a network access device;
receiving, at said network access device, said indicator;
preventing, in response to said indicator being asserted, said network access device from
initiating establishment of a communication channel through said distributed network;
10 generating, at said network access device, a signal indicative of said congestion in
response to said indicator;
deasserting said indicator upon the abatement of said approach of network congestion;
and
terminating, at said network access device, said signal indicative of said congestion in
15 response to said indicator.

2. A method as in claim 1, wherein said communications channel further comprises
a packetized voice call.

20 3. A method as in claim 1, wherein said detecting further comprises monitoring
capacity of said network.

4. A method as in claim 3, wherein said monitoring further comprises:

comparing the level of network usage against a congestion onset threshold;
asserting a congestion indication upon said congestion onset threshold being reached;
comparing the level of network usage against a congestion abatement threshold; and
deasserting said congestion indication upon said congestion abatement threshold being
5 reached.

5. A method as in claim 4, wherein said comparing further comprises measuring the
level of utilization of at least one data buffer against a congestion onset threshold.

10 6. A method as in claim 5, wherein said at least one data buffer comprises a
reassembly buffer.

15 7. A method as in claim 5, wherein said at least one data buffer comprises a
fragmentation buffer.

8. A method as in claim 4, wherein said comparing further comprises measuring
aggregate bandwidth usage against a congestion onset threshold.

20 9. A method as in claim 4, wherein said asserting further comprises setting of the
xECN bit in a Frame Relay environment.

10. A method as in claim 4, wherein said asserting further comprises setting of the
EFCI bit in an asynchronous transmission mode environment.

11. A method as in claim 4, wherein said asserting further comprises setting of a predetermined bit in the TOS byte in an Internet Protocol environment.

5 12. A method as in claim 1, wherein said transmitting further comprises:
setting a timer to monitor usage of said communication channel;
determining, based on expiration of said timer, nonuse of said network access device; and
sending spurious messages to said nonused network access device to prevent initial
establishment of a communication channel through said distributed network.

10 13. A method as in claim 1, wherein said generating further comprises causing a fast
busy tone at said network access device.

15 14. A method for controlling establishment of a communication channel in a
distributed network environment, comprising:

detecting approach of network congestion in a first network;
transmitting an indicator of said approach of network congestion in an access network in
operative communication with said first network; and
deasserting said congestion indicator upon abatement of said approach of network
20 congestion.

15. A method as in claim 14, wherein said indicator of said congestion is based on the
network protocol of said access network.

16. A method for preventing call initiation by an integrated access device, comprising:

receiving a congestion indicator appropriate for said integrated access device from a data transfer device;

detecting an attempt to initiate a call by a user of said integrated access device during periods of approach of network congestion in a distributed network environment; and

providing an indication to said user of said integrated access device of the unavailability of the requested service.

17. A method as in claim 16, wherein said data transfer device further comprises a DSL concentrator.

18. A method as in claim 16, wherein said detecting further comprises a call initiation using the Voice over Asynchronous Transmission Mode (VoATM) technique.

19. A method as in claim 16, wherein said detecting further comprises a call initiation using the Voice over Internet Protocol (VoIP) technique.

20. A method as in claim 16, wherein said detecting further comprises a call initiation using the Voice over Frame Relay (VoFR) technique.

21. A method as in claim 18, wherein said receiving further comprises receiving an asserted EFCI bit.

22. A method as in claim 17, wherein said receiving further comprises receiving an asserted bit in the TOS byte.

23. A method as in claim 20, wherein said receiving further comprises receiving an asserted xECN bit.

24. A system for providing call admission control in a distributed network environment, comprising:

a data transfer device operably coupled to one or more computers in said distributed network environment, said data transfer device including software executable on a first of said one or more computers and configured to:

monitor network capacity;

detect onset of network congestion;

indicate said network congestion upon said network capacity exceeding a specified threshold by asserting a congestion indicator appropriate for an underlying network protocol; and
deassert said congestion indicator upon the abatement of said network congestion.

25. A system as in claim 24, wherein said data transfer device further comprises a DSL concentrator.

26. A computer readable medium containing computer program instructions for providing call admission control in a distributed network environment, said computer program containing instructions for:

monitoring network capacity;

5 detecting approach of network congestion;

indicating said approach of network congestion upon said network capacity exceeding a specified threshold by asserting a congestion indicator appropriate for the underlying network protocol; and

deasserting said congestion indicator upon the abatement of said approach of network
10 congestion.